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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,162	08/07/2006	Frank Diedrich	2003P06024WOUS	6581
22116	7590	07/31/2008		
SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830			EXAMINER CLEMENTE, ROBERT ARTHUR	
			ART UNIT	PAPER NUMBER
			1797	
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			07/31/2008 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/554,162

**Applicant(s)**

DIEDRICH ET AL.

**Examiner**

ROBERT A. CLEMENTE

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/309)
- Paper No(s)/Mail Date 20051021
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 6 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,811,059 to Genovese et al. in view of German Patent No. DE 10105728 to Mueller.

Genovese teaches a miniature gas chromatography and ion mobility spectrometry system (GC/IMS), as shown in figure 1. As disclosed in column 4 lines 12 - 16, the microchip gas chromatograph (Microchip GC) includes a capillary gas chromatograph column, which forms a separation device for separating materials of a substance mixture passing through the column. A thermal conductivity detector (TC) is located downstream from the gas chromatograph and detects the separated substances in a nondestructive manner. The thermal conductivity detector (TC) is linked to a

computer (PC) downstream of the detector. A signal generated by the detector (TC) is sent along a path (2) to the computer (PC). As disclosed in column 5 lines 8 - 14, the computer evaluates the signal and generates a control signal which is sent along another path (3) to a high speed shutoff microvalve. When a specified substance is detected the computer signals the microvalve, which forms a controllable inlet valve, to open and allows the substance to be analyzed by the IMS. The microvalve is connected to the output from the chromatography column and the IMS is connected downstream from the gas chromatograph via the microvalve. Genovese does not disclose using a mass spectrometer instead of an ion mobility spectrometer. Genovese also does not disclose arranging the thermal conductivity detector in-line between the output of the chromatography column and the microvalve.

In regard to the use of a mass spectrometer, gas chromatography and mass spectrometry systems (GC/MS) are well known in the art, as alluded to in column 1 lines 60 - 65 of Genovese. One of ordinary skill in the art would reasonably expect that a mass spectrometer could be used equivalently as the ion mobility spectrometer in Genovese and that the choice would merely depend on the samples to be analyzed. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Genovese to substitute the ion mobility spectrometer for a mass spectrometer depending upon the sample to be analyzed since both are well known in the art.

Mueller teaches a chromatography system that is shown in various embodiments in figures 1 and 4 - 6. Each of these embodiments uses in-line detectors (12, 16). The

detectors are thermal conductivity detectors (21), the details of which are shown in figure 3 and discussed in paragraph [0023]. As disclosed, the in-line thermal conductivity detectors have internal cross-section dimensions that correspond to the cross-sectional dimensions of the separation column. This arrangement provides the advantage of allowing the gas stream to pass through the detector undisturbed, which will limit the effects the detector could have on disturbing the plugs of separated substances passing from the separation column. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Genovese to include an in-line thermal conductivity detector of the type of Mueller in order to allow for an undisturbed flow that would limit the effects of the detector on the sampling accuracy in the mass spectrometer.

In regard to claims 7 - 9, as disclosed in paragraph [0023] and shown in figure 3 of Mueller, the thermal, or heat, conductivity detector (21) comprises a measurement path (30, 31) through which the substance mixture passes of which the cross-sectional dimensions at least approximately correspond to the cross-section dimensions of the separation column. As disclosed, the detector (21) also comprises heat resistors (22 - 25) arranged in a bridge circuit (26), wherein two heat resistors lie diagonally opposite one another in two different halves of the bridge being arranged in the measurement path.

In regard to claims 10 and 11, the combination of Genovese and Mueller discloses all of the structural elements in claims 10 and 11. Further, the combination of Genovese and Mueller inherently would perform the methods described in these claims.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Other prior art references listed on the PTO-892 (Notice of References Cited) are considered to be of interest disclosing similar gas chromatography and mass spectrometry systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT A. CLEMENTE whose telephone number is (571)272-1476. The examiner can normally be reached on M-F, 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1797

RAC

/Duane S. Smith/  
Supervisory Patent Examiner, Art Unit 1797  
7-30-08